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MARCH 1, 1926

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VOLUME
XX

SPECIAL FEATURES

NUMBER
9

NEW YORK UNIVERSITY WIND TUNNEL
FORD CONTRACT AIR MAIL OPENS
PORTABLE TENT HANGARS

GARDNER PUBLISHING CO., INC.
HIGHLAND, N. Y.
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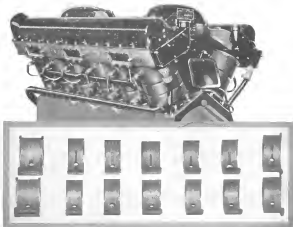
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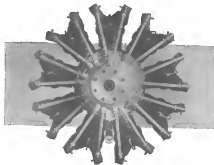
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No. 9

Aircraft Safety Appliances

WHILE AERONAUTICAL development is going apace and many new airplane designs and new methods are being developed, there still remains a wide field for invention in what might be termed a major sphere but, nevertheless, a sphere which is extremely significant to useful development. Air transportation is opening up rapidly throughout the country and with its development will be brought to the surface innumerable questions which will require the attention of engineers in their solution.

As in other forms of transportation, so in the air, insurance will be, and in fact now is, one of the primary factors to be considered in any operation, and it is extremely interesting to observe how, not only in insurance relieving air operation of the weight of carrying the costs of their own risks as operations but it is indirectly serving the valuable purpose of reducing loss along which development is required in the interests of safety in operation.

An interesting example of this may be cited as an application which was made in an aviation insurance broker for coverage in respect to an air line which involved the carrying of a stretch of water. Upon investigation by the insurance agent, it was learned that, while perfectly reliable flying boats were to be used on the route, there were no fitted with ether smoke signaling apparatus or flotation bags. A feasibility policy would have been available in the air operations but time two opportunities were provided. Yet it would seem that neither of these safety devices are readily available in this country.

Flotation bags for aircraft are available and have been used abroad, yet are not readily available in this country. The question of smoke signaling apparatus is extremely important. It will be remembered that, had the P-9 been so equipped it would have been possible to attract the attention of passing ships within a very short time after the forced signaling. Even, then, is a significant direction in which attention could be given, to the advantage of safety in air transportation and a reduction of operating cost incident upon longer insurance rates.

There is a general feeling that aviation insurance rates are extremely high but perhaps they would not be so if more attention was given to the minor details which make for safety in operation. Certainly marine insurance has had a very marked effect upon various commercial questions and, as a result of the regulations laid down by Lloyd's and other sources marine concerns, marked developments have taken

place in the fitting and equipment of ocean going freight boats and liners.

The Spain-Argentina Flight

ONCE AGAIN the Atlantic Ocean has been spanned by air and the great continents of Europe and America indeed and brought closer together. Yet another step has been taken toward the permanent establishment of aerial communication between national capitals and industrial centers of Europe and similarly important points on the east of the Atlantic Ocean. The Spanish fleet, under Ramon Franco, Capt. Juan de Alde and Pablo Roda, have completed, almost without incident, their flight from Spain to the Argentine. Buenos Aires, the destination of the flight, which commenced from Spain on Jan. 22, was reached on Feb. 10.

Although this flight represents actually the eighth crossing of the Atlantic Ocean by air, the flight is by no means belittled by this fact. The undertaking has created greater work from the commercial. Only once before has a commercial aviation route been covered by air. Reference is made to the flight of the Portuguese armada, who, in April, 1919, left Lisbon by air for Pernambuco and completed the distance after having visited two stopovers in the attempt.

The fact that the flight has completed a total time of no less than twenty days, was due almost entirely to the extended closeness given to the fact of risk and every point of call, such as numerous frequently made it necessary for them to delay on each day. Furthermore, Commander Franco showed good judgment in arranging for sufficient time to be given to overhauling the plane and engine prior to the resumption of the flight from each stopping point.

The really significant feature of the flight is that, in all, the total flying time was but 40 hr. 30 min. and 16 in., with the total distance covered at 6202 mi., indicates an average speed over the entire journey, at more than 300 m.p.h. That this is an extremely significant performance will be realized when it is realized that the airplane responsible for the flight is a large land carrying airplane of the flying boat type, such as might, in fact, have many possibilities in long distance over sea commercial transportation by air.

It is to be hoped that, in their return flight, the Spanish fleet will come North and cross the Atlantic Ocean from New York via the Azores and thereby, not only actual the already wide interest taken in their undertaking, but demonstrate their ability to upgrade the older ideas of the north. Hereafter, as well as the frequent transportation of the equatorial regions.

made of sheet metal, soldered into longitudinal openings of 3 in. round diameter. It is placed at the throat of the contracting cone and extends 2 ft. into the tunnel proper.

The experimental chamber or tunnel proper, is 25 ft. 9 in. long, and 4 ft. square. Inside, as far as is mechanically possible, all irregularities of surface, except parts of the experimental apparatus (such as the balance rod and momentum plates), have been removed so as to maintain as even flow as possible.

At the center of the chamber, directly above the experimental platform, is suspended the aerodynamic balance beam, and in the sides, are windows in permit entrance to the beam, and to allow of observation while tests are being run.

An expansion chamber or cone is arranged to draw the air velocity and bring it just the time before allowing the stream to flow back into the laboratory. The expansion cone is of heavy sheet metal. It expands from a 4 ft. square section to a circular opening 8 ft. in diameter. The expansion cone is a length of 22 ft.

The Fan

The fan extends a ten inches into the rest of the expansion cone and projects the air into the diffuser. The diffuser is an arrangement somewhat similar to the intake, with the purpose of further reducing the velocity of the outgoing air and also of distributing it evenly on all sides. Like the intake, it also is made of $\frac{1}{4}$ in. sheet plate 3 ft. 6 in. in diameter. The perimeter is 30 ft. 6 in. and 13 ft. deep.

In drawing the fan of a wood tunnel, so much a device as possible is greatly to be desired. The fan is driven by the motor, through a shaft which drives on a reduction gear. The perimeter is, in a four blade Curson OXS type 7 ft. 6 in. in diameter.

The power is supplied by a 35 hp. direct-current multipolar electric motor. Its maximum load is 97 amperes at 230 volts. It has a speed range of from 406 r.p.m. to 1590 r.p.m. The starting, stopping, and speed of the motor are controlled by a series of rheostats and relays under the direct control of the man on the experimental platform. Power for the motor is drawn from a direct current generator in the Sage Electric Laboratory, at the University.

The motor has a maximum speed of 1590 r.p.m. The wind speed on the working section is 80 m.p.h., although the speed is generally run at 40 m.p.h. By means of a specially constructed wind chamber, the speed can be lowered to 5 m.p.h. This slow speed is very useful in special experiments.

The platform on which the experiments work, is directly under the balance. It is 12 ft. 6 in. square, built of heavy wooden beams. These beams are fixed 4 in. by 12 in. wooden cross sections, which in turn, are held on 7 ft. 6 in. by 9 in. in wooden uprights, rising from the basement to a height 4 in. below the laboratory floor level. This brings the floor of the platform exactly 7 ft. below the center line of the tunnel or 5 ft. below the bottom.



General Layout Diagram of the New York University Wind Tunnel

The balance used for measuring aerodynamic forces on models held in the wind stream is, primarily, a balance varied arm shaft, rotating about its two ends, and about two perpendicular axes, one parallel to, and the other perpendicular to, the direction of the flow. The main shaft is supported in a bronze bush, having four spindles, split and accurately calked, into which are bolted four steel weighing beams. The weighing beams are fixed at the ends with knife edges, resting on "V" blocks, held by supports secured to blocks protruding from the floor of the tunnel. By means of thumb adjusting screws, these "V" blocks may be moved or lowered so that any point across the whole rotating system. This permits



The N.P.L. Type aerodynamic balance

the main shaft to move either with or across the wind.

The shaft is made with a large flange, having secured to 300 lbs. capacity, accurately scaled and numbered. To the main shaft, is fixed a raised arm, which turns it through any desired angle and fixes it to the flange of the bush. The second arm consists of a small weighing beam, extended by a horizontal arm at the lower end of the model holding

spindle. The spindle is on the upper part of the main shaft and rotates in roller bearings. A telescopic wind shield encloses the spindle from the main shaft to within a few inches of the model to reduce wind disturbance.

Adjustable counterweights are provided for balancing each weighing beam. These, with other weights on the main shaft, may be used for changing the center of gravity of the balance and the model, and bringing them into line and into the axis of rotation.

To permit leakage of air through the floor of the tunnel where the balance enters an oil seal is provided. The main shaft carries an insulated ring, which slips into an annular channel containing oil or the oil, and which is fixed to the floor of the tunnel.

A modified form of Kroll anemometer, graduated in millimeters, and indicating constant wind speed measurement, is connected to a static pressure plate fitted into the side of the wall of the wind tunnel at the working section.

The Tunnel Calibration

Complete and extensive tests have been carried out on the tunnel with a view to establishing its accuracy in the performance of standard tests and the carrying out of accurate research work. The whole apparatus has passed consistently free from vibration of any sort and the wind speed is very steady and easy to regulate by the operation of the tunnel.

During the calibration, the balance was checked for slight wind and adjusted, an error of $\frac{1}{2}$ per cent. in the true wind speed, having been discovered and corrected. First, a set of lift, drag and pitching moment readings were taken, under the standard Curtiss 7 in. 18-in. airfoil and the results were compared with the readings on the same model in

the Curtiss 7 ft. wind tunnel. As a result of these tests, it has been established that the cross-arm will give readings which enable the determination of static forces on the model to within about 0.02 lb. The moment device is sensitive to about 0.1 in. lb. The final alignment of the balance shown that for constant lift, the drag readings with the wing in normal and reversed position check within an error of less than 1% over a range of angles of attack from 0 deg. to 5 deg.

Velocity Distribution

In an effort to obtain an idea of the uniformity of the air flow across the working section of the tunnel, a traverse was carried out with a pilot-static tube at a wind speed of 40 m.p.h. The velocity distribution across the section was found originally to be by no means uniform, showing a maximum variation of as much as 6% and area mean. After several test arrangements of vanes placed in the vicinity of the intake had been tried out, it was finally found necessary to block off a portion of the intake. In this way, it has been possible to obtain a perfectly uniform velocity of air across the entire working section, with a maximum variation from the mean velocity of less than 1%.

As a result of these extensive tests it has been definitely established that accurate data, both qualitative and quantitative, can be obtained in the tunnel with extreme reliability and extensive tests on a variety of the most interesting and significant tests are being carried out at New York University under the direction of Prof. Alexander Klemin, Department Professor of Aeronautical Engineering, who is in charge of all the research work carried out at the University.

In Support of the Air Operator

To the Editor of AVIATION.

We want to express our personal gratitude to you for printing as many letters into this item, and particularly from civil fans.

The under two, for the last several months, have been actively occupied in getting the viewpoint of fleet and less very good both on military and commercial aviation. The Army and Navy have, both old and young, but have not so far been in getting the views of the younger civil fans as you have been.

We are required to say that you do not support the English regulations. In this connection, it is interesting to note that a mechanically successful steam automobile was created and tested in England something like ten hundred years ago, but all commercial development was made impossible by a law which provided that all steam driven vehicles on the public highway must proceed at not above three miles an hour and have a man with a red flag with behind them.

Now when the National Aeronautics Association wants, and we feel sure that you will agree with us, in a regulation analogous to that which obtains in connection with steam vessels in this country, and going into one step beyond what experience shows to be absolutely necessary.

We sincerely beg your invaluable support, assistance, and guidance in this very difficult and complicated problem.

I beg an observation to heavy readers who very well considered article by Cy Caldwell on Page 187 of your issue of February 1, but we take exception to one thing in it—where he says "We have an assumption or opinionated body in speak for us." This National Aeronautics Association was established for the express purpose of speaking for any and every person having legitimate interest in aviation. It is offered by pilot or men who were pilots during the World War. Among our Governors are a large number of pilots and well known civil leaders, and we beg to state that if any person connected with aviation, and in particular, any pilot, has any business in Washington and wants to see legislators or have any views of his brought to the Congress he will certainly bring welcome and every possible assistance and cooperation from the officers of this Association here in Washington.

At the last meeting of the Board of Governors, it was a

man of particular satisfaction to know that Alexander Klemin, who is now pending, and it is hoped that we can get together to make sure this Bill is passed, with such modifications as may come last in their interest.

THOMAS R. CURRY,

President, N.A.A.

The Heeneys OXS Monoplane

An interesting OXS airplane has been constructed by James R. Heeneys, mechanical engineer at the University of Illinois. The plane has had considerable experience in reconstructing and reconstructing airplanes.

The plane, with the 60 hp. OXS engine, has proved a success and is said to have a cruising speed of 130 m.p.h. at 10,000 ft. The climb of the plane is also very good.



The Heeneys Monoplane

From the photograph it will be seen that the plane, a conventional monoplane type, is a cabin machine. It carries two passengers in addition to the pilot, together with a full load of fuel for a flight of 3 in. distance.

The general details of the plane are as follows:

Wing Span	30 ft.
Wing Area	1,000 sq. ft.
Wing Loading	100 lb. per sq. ft.
Wing Tip	100 lb. per sq. ft.
Wing Tip	100 lb. per sq. ft.

The Meteoromotor Engine

A Four Cylinder Radial Air-Cooled Engine for Light Airplanes.

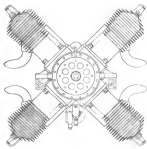
THE METEORMOTOR, Model 22, was designed by J. Fulton Brown and is manufactured by the Brown Aircraft Company, which has been building light airplanes for a number of years. An engine, to meet up-to-the-minute requirements of the light airplane, must be of light weight, and be reliable and strongly built so that it will stand up under

shockwaves and be easy on handling, i. e., fit, with few mounting brackets. Special intake connecting rods are used in the engine, each with locked ballast weights. The pistons are of flat girth cast iron and carry three rings and weigh but 30 oz.

Equipment Details

The valves are of large size and made of forged-steel with bronze stems. Both the main and thrust bearings have 13/16-in. diameter shafts. An aluminum thrust separator is used, and a special high tension Bosch magneto furnishes the ignition. Lubrication is by pressure and can be regulated from the dash on the pilot's cockpit of a plane fitted with this engine.

The complete weight of the Meteoromotor, including magneto, accessories and propeller hub, is only 65 lb. The cylinder spacing is 72 in. in. The engine, which is very smooth in running, develops 30 hp. at 2600 r.p.m. and consumes 37.5 gal. of gasoline per hour and 15 pints of lubricating oil.



Central layout of the Meteoromotor

In running, the engine is not only, as just stated, very free from vibration, but is remarkably flexible in the control. Furthermore, owing to the simplicity of the various parts of the engine, it is indeed a pleasure, as is also operation, and the light weight of the various parts of the engine make disassembling and reassembly very simple.

The general simplicity of the engine is evident from the general layout drawing. It will be seen that, contrary to usual practice with radial engines, of which type presumably the Meteoromotor may be considered, the engine bearings are not arranged to attach onto a vertical casting, but hold the engine down by means of two straps attached direct to two lugs. This is an extremely simple arrangement, and greatly reduces any difficulties which might otherwise be encountered in fitting the engine into small lightplanes.



The Meteoromotor engine. The photograph illustrates the extreme portability of the engine.

load and excessive weight. It must also be powerful enough to fuel a compressor, easily mounted, removable, fuel pump, fuel valve and fuel distribution.

New Model is Lighter

After four years of experimental work in developing an engine that would fulfill the above requirements of the light airplane, the last production model of the Meteoromotor was brought out under the direction of J. F. Brown and associate engineers E. H. and O. L. Howard, in the spring of 1935, for use in the Meteorplane, Model W-7, which was described in the May 22, 1932 issue of AVIATION. This little plane has flown with many kinds of types of motorized engines, but, when powered with the Meteoromotor, the movement speed is increased to more than 100 m.p.h., and the ceiling to 15,000 ft. The 2000 model of the Meteoromotor differs from former models in that it is lighter in weight by 4 lb. and has copper instead of iron valve fins and on the 1600 model.

Construction

The cylinders are made of the finest green gray iron, machined both inside and outside, and ground. By a special process, the copper cooling fins are electrically joined to the cylinders. The result is of special heat treated aluminum-silicon steel, reinforced and ground from a solid 60 lb. piece and, when finished, weighs only 9 1/2 lb. The cooling fins of aluminum

Portable Tent Hangars

Strong and Reliable Tent Hangars May Mean Great Reductions in Initial Cost of Operations in Commercial Flying

By W. T. SPALDING

President, Spalding Construction Company

COMMERCIAL AVIATION today has to meet some of the same sort of emergency situations as private fields and hangars that military flying had to contend with in the War. In the summer of 1918, the U. S. Navy's "North Sea Bombing Group" was organized to help the British air forces and the enemy was hovering over the British coast. It was attached to the Royal Naval Air Station at the Fleet Naval Headquarters at the time. One of the ships that fell to us was that of designing and providing portable hangars for the big Empire Express bombers which were coming from Italy. The necessity of protecting these big bombers from the British weather was as evident as was the need of being able to gather up the protection, and was made doubly so by the fact that the very short notice

The First Tent Hangar

I designed a large tent hangar with eight supporting poles and a heavy rope framework and worked out the details with the Spalding Construction Company's engineers in Paris. Only one hangar was actually erected. The hangar fits in the Company, together with the reasons of the British, all accepted to eliminate the need of the hangars. However, the experience gained has lately come into use again in providing a portable hangar for private air fields.

Most commercial aviation projects at this time are faced with at least some housing situations that cannot easily be met, except by temporary and movable hangars, before commencing an air line service between two or more cities. In the first place they are probably most open and most un-qualified looking for any airports within the next five years or so. Then, too, it is estimated to erect a 25,000 to 50,000 permanent hangar on ground held, or even if it is under a short term lease. Furthermore, many things are easy to raise the abandonment of one field is done or rather. And back of these reasons lies the economic fact that, only after a new hangar venture has proved successful, a new justification is possible, more capital permanently laid out and involved. However, an air route must start with, at minimum, a level field in stability and some sort of housing for its planes, without waiting for any additional, or even better, to supply it with permanent good improvements. Next, therefore, one can use the so-called portable tent hangar.

Developed From Past Experience

An airplane should always be protected from dust and dangerous and the many other destructive elements of weather exposure. There has been no hanging tent hangars developed during the past year or so, for a reliable and practical portable hangar, and the Spalding tent hangar has been designed with a view to doing this. It is not entirely unlike the wartime Empire Express, although it has some decided differences. The extreme portability of the wartime hangar is enhanced for a much greater thickness. The capacity is far larger than of four planes, of varying size, instead of four single 100 ft. open planes. The new details involved are derived (being absorbed partly) with the last American front line fighters, instead of the hangar being based upon American details.

The type of hangar finally adopted is the strongest and most serviceable, has a center ridge to form a well pitched

roof. There are 60 ft. wide doors on two sides, with cables to support the door curtains and two separate cables to carry the roof poles. The type of hangar is not changed in all dimensions to accommodate four, three or two planes, or even one. The ridge is curved on poles far enough apart to give wide clearance for the tails of the planes which pass between them. The all-important question of gaps is insured by a double set, being incorporated, one independent of the other and



As Example of a Portable Tent Hangar

the other attached. The design of the hangar have been fixed very largely by the experience of the Army and Navy and Spalding governments.

To Withstand Heavy Weather

The question of heavy tent must also be considered. It is not possible to tent a tent even in the most weather. If it can be done with safety, it is not a hangar, it is a tent. The white canvas roof and walls allow some daylight to pass through it and electric light using a very well supported from the post poles. The hangar roof poles consist of two locking or supply storage rods of about 15 ft. by 1 1/2 in., which are outside the main rods of the planes. One important feature is a set of wall poles and green which are for emergency use in reinforcing the door curtains and the roof as hangars, in case of heavy storms. The tent is designed to stand a 10 mph. wind, or a foot of snow on the roof, and, if there is much to keep any ropes tight, it should also be a 100 mph. side safety. Thus, a good storm is possible at a cost of only about 10 to 15 per cent of the cost of any other type of hangar.

The development of aviation, at its present stage, is perhaps as dependent upon such services as equipment costs as it is upon the investment of capital. Not only so, such services include the necessary initial capital investment, but they make possible a better showing of returns on investment. In other words, aviation today requires the assistance of any device that will reduce the initial costs of putting new property into operation. This applies to the contract Air Mail service and other new service projects. It also may mean a lot of flying school, load, passenger and exhibition firms and to private concerns. Furthermore, the portable hangar is almost a necessity in the equipment military airfield units. There is, in fact, hardly any aviation activity which may not find great help in the use of low priced but reliable portable tent hangars.

unemployed to do by officers without reference.

Clearly, if you will, the kind of performance which is required is represented there with that of the non-military world-fliers. During the time that they fly 350 hours and need eight months, I feel about the same amount of hours with eight months.

Please do not misunderstand me, for I do not mean to belittle these accomplishments, that would be quite impossible and I wish to say that it would have been very poor judgment on my part not to have presented a picture, simply, of miles, but I see this picture to show the essential difference existing between aviation military and aviation commercial. How likely it would be to place control of civil aviation in military.

People in this country have always insisted that the military should strictly to their own business in times of peace and I see no good reason that aviation should be under an exception.

Federal Legislation

I have been in aviation aviation for the last five years and have been engaged in passenger work, student work, test services, etc. For the last year I have been presenting along the Pacific coast from Harris, Calif., north to Portland, Ore. This contains a very rugged, "Bunker" type plane which an airplane can be loaded. During this one year I have seen only one pilot in the air who was in this service. I have been there a year and half five passenger plane, built by the United States, built by the United States.

During the year I have landed in numerous places where some of the individuals had never seen an airplane. A few places that I have been where there have been flying planes before me. I found an airplane regulation. On the way, one of the best boys, some time before, had gone into Southern California and bought himself a Texas and taken instruction. As it is the one with many students, he became a better pilot, in his own situation, than his instructor. He lived some 15 by his plane up to his home town and then after this pilot had left, he proceeded to give the town three first surprise exhibitions. As I heard it, he had not asked before this time. Not content with going alone he took a passenger with him. A slight wind was blowing across the beach, the only mistake landing place, but he made the take-off successful. On landing, he became nervous with the result that he struck the plane's nose to the breakers. Luckily, no one was injured, but the notion of flying, from this on, made the people nervous that airplanes were not safe to get.

Another time I had a call to go to a levee some three hundred miles away. It was among the mountains, and I had never been there before, the first stage I did was to telephone and inquire about landing fields. It had been raining for ten days and the ground was very wet. When I called they informed me and to one of their local citizens, and the information he gave me was that they had a field—no landing field and gave me the location. I had been warned, so I went, and asked if he was sure that it was in good shape. He assured me that it was. When I arrived I found the field and surrounding country covered with water. I had been told that the ground was of the quality of the field, I landed. Because this surface water I discovered a ditch that they had forgotten about and left my landing gear three to sink it. Nothing serious, but left me with a bad feeling.

Another place that I landed on the Pacific side to carry passengers, I was told that it would be hard to do because there was more before a pilot had taken up two local people, and, thinking there is the ground, would, killing several and both passengers, all due to landing one but a pilot desiring publicity for himself, not at all for the good of aviation. I spent the rest of that week trying to convince the people that such an accident is due to the pilot and not the plane.

The main argument for my reputation at all has been that flying by unlicensed pilots has been unsafe. I agree with that statement but I do believe that it was unwise. I believe that it should have been that flying be controlled

between pilots and unlicensed pilots has been unsafe. I know as many pilots in the United States that are doing more harm by their thoughtless flying than some of the unlicensed pilots. People expect more from the licensed pilot and when he makes a spot of himself it does not improve the license standard in the eyes of the public. Therefore, I think that if there is regulation it should include more than merely a license on paper as are the licenses issued by some states.

Aviation should be supervised, but this should not be evidence as to, education. A good pilot is usually one that is careful of his machine and of his home depends upon the regular inspection of this machine he will soon cultivate the habit. It is a fact that most accidents are due to recklessness, thoughtlessness, or poor piloting, rather than structural defects.

I hold an Oregon State Pilot's License Number 8, and a Professional Pilot's Association Membership Number 25. In the last we agree to do no law flying over congested areas, nor any flying that endangers the public or passengers. Some pilots believe that too active but I feel that it gives the public more confidence in the pilot.

Aviation accidents should be published with the full story of the accident and not with the intent to sell newspapers or create aviation. If the pilot was at fault it should be so stated. One morning I heard a newspaper saying, "Well known aviator killed." Upon reading the article I found that the aviator had committed suicide. It was after an ending the story, but the person who read only the headline or heard the accident, checked up another facility against aviation.

The Douglas field, in my estimation, handles the situation as well as could be expected. It is very much to the point and if passed it could be made of great benefit to aviation, but it also could be stretched or modified so that it will be a detriment to aviation. It ought to be some standard, such changes as examinations for qualifications of pilot's license, etc., or first class examinations such as the Army Air Service was not to be applied to commercial flying. Such severe examinations would more put the burden on aviation's progress as a aviation or commercial pilot does not require such a pilot's physique.

In the morning on Feb. the bill provides that accidents from that the aircraft's use of "Cessna" may not tally with the views of the Secretary of Commerce.

I also believe that regulation by the Federal Government alone is better than state regulation. Airplane come in such territory that if they were to make a transcontinental trip, the pilot in the case of state regulation, would have to carry a complete set of laws for each state, or more, for reference in case of several landings.

W. J. KENNEDY,
Hatter, Ore.

Suggests State Laws Later On

We have been flying in Army Standards and Jungs, have landed twenty-two students to fly, and no students and survivors have carried more than 4000 passengers in the past five years without a serious accident. It seems to me that the aviation pilots under the good old British Standards Jungs, both over, and stage makes racing in horsepower from 40 to 225 have made just as good showing as the Army.

We do not think it would be the proper thing to put aircraft under government control at this time, as we believe it would retard the advancement of aviation. When the case for regulation does come, we think it would be better for each state to handle its own regulation just as the automobile is handled.

We feel that for the safety of all concerned there should be no suspension of planes by someone at each airfield. These planes could be filed by the state and they could approach the state to be used. It would be required to report planes after a crash, or every five months, and in this way it would keep some of the boys from flying junk and require each owner to keep his plane in good flying condition.

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From New York To Florida

WINGING her way from the frozen North, "Miss Key Largo City," recently came to rest on the sunny waters of Florida, marking the course of the proposed passenger air service between New York and the South.

If conditions warrant, additional planes will probably be placed in operation by the Fairchild Flying Corporation of New York, each one capable of carrying from 10 to 15 passengers.

"Miss Key Largo City," illustrated below, is fitted with Valpar. And good reason! For no other varnish can equal Valpar in service and protection. Blistering tropical sun, abrupt changes of temperature, driving winter storms, splashed oil and gasoline—Valpar withers not them all. Absolutely waterproof, Valpar is the one varnish that never turns white.

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From Bill With Qualifications

I am in favor of and would like to see the Federal bill go through. There are thirteen states with different laws, therefore it would be best for Federal bill to cover all. It will give pilots and small operators a firm footing as to what they can do and where they stand, instead of, at times, having fifty-eight different laws.

I think the Bushman Bill is a good start to promote commercial aviation. I hope that the rules, law, planes and pilots are not made too strict. Furthermore, wouldn't it be better to look more in character and reputation than for too much physical test.

Is it fair to the pilot who has trained and struggled hard for aviation in the past five years, with experience, reputation, business and money tied up, to be disqualified for some little fault or defect? Will it be fair to the public to take those men who believe they have confidence in and respect for, for no reason of any great extent, and give them one who must be taught the glass and experience from the bottom up, who may just have passed a perfect physical test, etc. A majority of the public has commercial aviation in heart and want it to grow. Give them a chance and possibly find a hand. As to my own hand luck and wings in my home state, I have been disappointed and surprised with aviation since 1934, and since 1935, almost regularly. I understand all types of planes and engines.

In 1935 I learned to fly from one of the best and most conservative men in the Army, now dead, who is now back in the service. (Note: in 1935 I acquired a field at White Terry Lake and did all my own flying. I established myself as an instructor. I had a business that was just going to go over the top and enable me to set new and later designed ships. When in October 1935, the hell came down and I lost and just because my left eye vision could not be brought up to a test

required by the government pilots.

Everything went like a rock and left me deep in the hole. I had to learn some my business and prospects, and since this time.

K. JENNISON,
White Bear Lake, Minn.

Scheuch Law Will Encourage Investment

Proper Air Legislation, in the future, necessary to prompt healthy aviation development in this country. My flying experience dates back to the pioneer days of 1913. For the past five years, my interests have been confined chiefly to the status of Manufacturers and Commercial, both of which seemed flying in the vacuum and licensing of pilots, and the inspection and regulation of aircraft. Commercial pilots, flying non-sports planes have actually profited under state legislation, due to the confusion of the man in the street through his knowledge that the state requires which he knows is actually doing something to safeguard him when he does desire to fly.

Crystal is necessary to any industry. The investor, who represents capital, do not find justified in raising their money unless the equipment and organization which they are backing means under some sort of legislation. Aviation does not exist from any other industry, where varied from the conventional standpoint.

Too much regulation is as harmful as too little. In England I had the opportunity of observing many of the facts brought out by Lord Mountbatten Committee in his interesting book on Aviation. I discussed a British flying license, and also talked personally to the structure and long-windedness of the examination.

HARRY D. CHILGARD,
West Hartford, Conn.

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AIRPORTS and AIRWAYS

Gary, Ind., Goes into Action

After one or two short "flaps," Gary went into action with a bang and organized a club which is known as the Gary Aeronautical Society. A high sounding name but so some high sounding than the name and quantity of this society, made up of experienced pilots, mechanics, "hang-arounders," teachers, and friends of aviation.

The society meets weekly in the Public Library and discusses many things of interest. It expects to help the City of Gary establish a municipal landing field this spring or early summer. Also it plans to provide the city with some specially marked roads on their plans flying over the city for the first time will know that they are looking down upon the "Steel City" of the middle west. The landing field will be a boon to pilots flying West for they will not have to fly over the city of Chicago in order to find a first class field and the accommodation that go with it. Gary is presently on the list of Chicago as Highway to West.

The officers of the Gary Aeronautical Society are: Charles A. Merik, president; Capt. Jack Yarn, vice president; Boston Moore, secretary and Louis Paul R. Mervin, treasurer.

New England News

By Peter Adams

Although the weather at Boston, during the last two weeks, has been too stormy for flying, the local pilots have needed an excellent amount of themselves. Two weeks ago, from the Airport, the Army had a total flying time of 544 man, with 55 flights, while the National Guard flew for a total of 613 man, with 115 flights, and the Navy was able to operate two days from the Naval Reserve Air Station in Squantum, with a total time of 314 man.

On Thursday of that week, Don Harbord started on a tour of inspection for New York to a 100 but the weather was so bad it was necessary to return after about 40 miles.

During the week of Feb. 11, the National Guard (rigger) the last for the week with a total of 800 man flying time. In this connection, it is interesting to note that Leroy Ames Jones, of the Army Air Service, who is detailed as an instructor to the 26th Division Air Service, Massachusetts National Guard, established a total record of 24 hr 29 min flying during the week of January.

The Army, for the last week made 16 flights with a total of 545 man. The Navy spent all of its time at Squantum in overhauling their planes and getting ready for the strenuous service ahead.

On Thursday of that week, Lieut. Jack Harding, of the World Flight, delivered his lecture at Symphony Hall, Boston, for the benefit of the endowment fund campaign of Boston College. The lecture was well attended in spite of the cold and showed that Boston at least, had not forgotten the great accomplishment of the Army Air Service and had not lost its interest in the advancement.

Word has been received that Lieut. Candy Noel Davis, who was formerly in command of the Naval Reserve Air Station at Squantum, has received permanent orders to the Bureau of Navigation at Washington and will now be there officially directed to take charge of all Naval Reserve aviation matters.

Or Caldwell, who is now operating the Boston Airport Corporation and the Travel-Air Company, reports a great business on his southern trip. He felt, by his southern trip, evidence and already reports that he has sold three planes, while Donald Byrne, the president of the Boston Airport Corporation, reports the sale of three planes in Florida.

William H. Garrett, Secretary of the National Aeronautical Association for the State of Maine, reports great aviation activity in Portland, Bangor, and other places through-



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out Maine had experts that chapters of the Association will be formed in Portland and Bangor in the near future.

It is estimated that a group of men interested in developing the airport and local aviation at Bangor, Maine, have requested that one of the Trans-Isair planes be sent down there sometime this month to demonstrate its value on that kind of service. They have already signed up Bangor for the New England Airways which are being sponsored by the Trans-Isair Company. Connecting links now reported are at Hartford, Boston, Portland and Bangor, and it is claimed that service will begin when the weather improves—probably during April. There will be no scheduled operations but rather merely co-operation reporting landing fields, weather report, loss conditions, etc.

Bangor has been received in letters of a proposed alliance in the form from Boston to Detroit and to include Albany, Utica, Syracuse, Rochester, Buffalo, and Troy. Complete details have not yet been disclosed.

Chicago News By G. Ross

Through the efforts of the Commercial Aircraft Association, a "pledge" has been incorporated in the Republic's platform, demanding an adequate air force for national defense.

Tolson Vanevor is now beginning to make the necessary arrangements for the Fourth Annual Tournament for Military



Mention at the Madison Association of Madison Flight Convention that children throughout the nation.

airs. Aircraft flies on May 8, in the big celebration of the Municipal Fair. Many valuable prizes have been donated for the aviation to past years, and a great number of boys have won their first and airplane ride by winning one of the many that were awarded in previous years.

The Healy Aircraft Co. has, again, modified several more aircrafts, and their shop is such a busy place that it makes the general aviation member look like the biggest hawk in town. Many customers are already on the way for the coming month.

Hartford Airport News By G. Ross

There are a great many changes going on in the way of construction work on the Hartford Municipal Field. The Connecticut National Guard Unit has been practically all moved to its new and permanent location, with the addition of a large administration building, motor laboratory, radio room and a well-equipped machine shop.

The municipal city hall has also been moved to its permanent location along the river bank and is now full of people for local aviation, there being no activity along the lines of commercial flying due to the recent heavy fall of snow.

Wentworth Ballfield of Municipal Field recently visited inside in Hartford and succeeded in making a very pretty landing



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on the snow, despite the fact that in places the snow was two feet deep in drifts on the field.

Local Leona Elder and Miss William Ladd, of the 11th Observation Squadron, met with a slight mishap on taking off for Mitchell Field because of the deep snow.

Commercial firms are checking off the days on the calendar between now and the time they can land and their planes, ship off the road that has accumulated since last fall and get into the plane again. They look forward to their greatest season of activity.

The Remington-Downs machine, which was tested down, was returned to Hartford on a flying and is now undergoing repairs at their local factory and it is hoped that the plane will be in the air some time in the early spring.

In the past year, Generalissimo has shown a real aviation spirit in appointing four corporations, namely: Colonial Air Lines, Inc.; Pratt & Whitney Aircraft Company, New Haven Air Terminal, New England Aircraft Corporation.

935 Flying Hours During Year

Those being the official world records for the greatest amount of flying done during the course of a year, it is somewhat difficult to ascertain who would hold the record of those who were not. Recently certain reports claimed the title for a Navy flier. The Army authorities, however, suddenly claim the record for Rhine Field, New York, where it is stated that, at this field, some pilots reported the 780 hours mark during 1934 and that Capt. Pig, who headed the list, has 935 to his credit.

The War Department statement of General Staff requirements for 1935 contains the names of three Air Service officers, viz: Capt. Del Ray C. Norford, Maj. Joseph T. McVerry and Maj. John D. Hendon. Capt. Del Ray C. Norford will report to the Chief of Staff, War Department, Washington, D.C., upon completion of the present course of instruction at the Army War College, Washington, D.C.; Maj. McVerry, of the Command and General Staff School, Fort Leavenworth, Kansas, will report on July 3, 1935, and Maj. John D. Hendon, a student at the Army War College, will report on Aug. 15, 1935.

Air Service Officers Detailed to General Staff

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Low Altitude Bombing Tests

Capt. R. C. Bittel, Group Armament Officer at Kelly Field, Tex., conducted service bombing tests recently to determine the ability of pilots to hit targets from very low altitudes, 50 to 20 ft., also to determine the handling and rolling qualities of different types of bombs. The 100 lb. demolition bomb rolled 180 ft. from the point of striking the ground, and landed about 20 ft. into the air. The 10 lb. demolition bomb did not roll but stuck into the ground, due to noise softening the ground. The 17 lb. bomb also stuck in the ground for the same reason. Further tests are to be conducted by Capt. Bittel in the near future to obtain information relative to a delayed time bomb.

\$35,000 To Try Mitchell

The next recruit of William Mitchell, former assistant chief of the Air Service, and the War Department \$35,000, according to information obtained by the House Appropriations Committee by General H. H. Judge, Assistant General of the Army.

Aviation For Navy Officers

All line officers of the Navy must have a fundamental knowledge at least of aviation before they can be promoted,

sounding to instructions sent out to the whole Service by the Bureau of Navigation.

Effective on the 1st of Oct., 1906, questions on aviation will be raised at officers coming up for examination, the extent of the information required covering a range of different phases of aviation. The matter to be included in the examinations will be left to the president of the Naval Examining Board, who has expressed an opinion that there should be a gradual increase in the requirements.

To most officers who are asked for information for letters transmitted for their information the ultimate scope of what it concerns should be the requirements and also a number of questions which would be appropriate to determine whether the officer possessed the requisite knowledge of the law.

Genl. Leslie J. Maxson detailed to duty involving flying Navy aircraft. Posture, Navy Yard, Ohio.

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